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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yuanhao Sun

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INTEL/BSTZ

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

1279 OAKMEAD PARKWAY

SUNNYVALE, CA 94085-4040

EXAMINER

BENGZON, GREG C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,319	Applicant(s) SUN ET AL.	
	Examiner GREG BENGZON	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been examined. Claims 1-18 are pending.

Making Final

Applicant's arguments filed 03/22/2010 have been fully considered but they are not persuasive.

The claim amendments regarding -- '*second transmission protocol comprising non-multicast protocols*' -- and -- '*continuing to participate in the multicast download after an error if a file size is unknown and a last packet has not been successfully received*' -- and -- '*if the file size is known and the total size of the lost packets is less than a pre-selected amount*' -- alter the scope of the claims but do not overcome the disclosure by the prior art as shown below.

The Examiner presents new grounds for rejection as necessitated by the claim amendments and is thus making this action FINAL.

Response to Arguments

Applicant's arguments filed 03/22/2010 have been fully considered but they are not persuasive.

The Applicant presents the following argument(s) [*in italics*]:

... *Marchand provides no teaching of differing protocols.*

The Examiner respectfully disagrees with the Applicant.

The Examiner notes that Marchand Paragraph 53 disclosed splitting the multicast transfer and the recovery transfer phases so that different protocols may be used for each phase. For the initial transfer phase Marchand Paragraph 60 disclosed existing broadcast/multicast protocol which cannot guarantee that all nodes will contain copy of the replicated file and is a non-reliable multicast transmission protocol. The second phase is the recovery transfer phase which is performed using the symmetric-connectionless file transfer protocol by Marchand which is a reliable multicast protocol. Thus Marchand disclosed at least two different protocols for completing file transfer.

The Applicant presents the following argument(s) [*in italics*]:

...[the prior art does not disclose] *second transmission protocol comprising non-multicast protocols'*

The Examiner respectfully disagrees with the Applicant.

With respect to splitting the multicast transfer and the recovery transfer phases so that different protocols may be used for each phase, Marchand Figure 3 appears to indicate that the recovery process may be implemented using both multicast and non-

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multicast methods. However Marchand does not explicitly state using non-multicast methods.

Riedle Column 1 Lines 40-55 disclosed unicasting and multicasting protocols for implementing file transfer. Furthermore Riedle Column 2 Lines 45-55, Column 3 Lines 15-25 disclosed wherein only one client may initiate the recovery transfer phase. Riedle Column 4 Lines 10-25 disclosed wherein each individual client device require different packet ranges for recovery.

At the time of the invention it would have been obvious to implement the recovery transfer phases by Marchand using the unicast (*'non-multicast'*) protocols because as suggested by Riedle the different client devices require different packet ranges for recovery and multicast protocols only make sense when the information being transmitted to each multicast recipient is the same.

The Applicant presents the following argument(s) [*in italics*]:

...[the prior art does not disclose] *continuing to participate in the multicast download after an error if a file size is unknown and a last packet has not been successfully received'* and [initiating the recovery process] *if the file size is known and the total size of the lost packets is less than a pre-selected amount'*

The Examiner respectfully disagrees with the Applicant.

Marchand Paragraph 63 disclosed wherein requests to forward missing (or corrupted) file fragments are sent out to the selected slave process in order to recover the missing fragments.

Thus Marchand disclosed (re. Claim 1) '*continuing to participate in the multicast download after an error and a last packet has not been successfully received*'.

The Examiner notes that in Marchand Paragraph 49 the file size is a known quantity because all information required to perform a file transfer such as file name, file flags, life span, file size, etc are duplicated in each data packet. While the Marchand recovery process does not require any verifications, limitations and constraints regarding file size in order for Marchand to complete the recovery process, Marchand does not explicitly account for file transfers in which *a file size is unknown*.

Riedle Column 4 Lines 50-55 disclosed a file being transferred on a multicast network to a receiving client where the tracking system is dynamically scalable to accommodate extremely large files. The said tracking features could be dynamically completed while the transmission was in progress without requiring knowledge of the actual size of the file before transfer begins.

Riedle Column 11 Lines 10-20 disclosed wherein the client re-requests transfer of the specific packets missing as indicated by the holes in the array.

Thus Riedle disclosed (re. Claim 1) '*continuing to participate in the multicast download after an error if a file size is unknown (Riedle- Column 4 Lines 50-55 without requiring knowledge of the actual size of the file before transfer begins) and a last packet has not been successfully received*'. (Riedle- Column 11 Lines 10-20, the client re-requests transfer of the specific packets missing as indicated by the holes in the array.)

As previously stated in Marchand Paragraph 49 the file size is a known quantity because all information required to perform a file transfer such as file name, file flags, life span, file size, etc are duplicated in each data packet.

However Bailey-Marchand did not disclose (re. Claim 1) *'requesting the packets not received by the second device if the file size is known and the total size of the lost packets is less than a pre-selected amount'* .

Riedle Column 4 Lines 5-15 disclosed wherein the reconstruction of missing packets is performed only when the *total size of the lost packets is less than a pre-selected maximum threshold*. If the number of lost packets exceeds this maximum, then all data is thrown away and the transfer is restarted from the beginning without performing the reconstruction of missing packets.

Riedle disclosed (re. Claim 1) *'requesting the packets not received by the second device if the file size is known and the total size of the lost packets is less than a pre-selected amount'* .(Riedle Column 4 Lines 5-15,the reconstruction of missing packets is performed only when the *total size of the lost packets is less than a pre-selected maximum threshold*)

Priority

This application claims benefits of priority from PCT Application
PCT/CN2005/000264 filed March 7, 2005.

The effective date of the claims described in this application is March 7, 2005.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5,7-11,13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey (US Patent 6185623) further in view of Marchand (US Publication 2008/0168157) further in view of Riedle (US Patent 6983334).

Bailey disclosed (re. Claim 1) a method comprising: receiving a request from a first client device to download a file to be transmitted as a plurality of packets of data from a server device; (Bailey-Column 3 Lines 25-45, Column 4 Lines 5-15)

However Bailey did not disclose (re. Claim 1) multicasting the plurality of packets to multiple client devices *using a first transmission protocol that comprises a non-reliable multi-cast transmission protocol* and requesting, when the first client has completed download of the file, from the server device with a second client device from the multiple client devices, the packets not received by the second client device wherein

the request utilizes a second transmission protocol that comprises a reliable protocol.

Bailey did not disclose (re. Claim 1) '*continuing to participate in the multicast download after an error if a file size is unknown and a last packet has not been successfully received*'. Bailey did not disclose (re. Claim 1) '*requesting the packets not received by the second device if the file size is known and the total size of the lost packets is less than a pre-selected amount*' .

The Examiner notes that Marchand Paragraph 53 disclosed splitting the multicast transfer and the recovery transfer phases so that different protocols may be used for each phase. For the initial transfer phase Marchand Paragraph 60 disclosed existing broadcast/multicast protocol which cannot guarantee that all nodes will contain copy of the replicated file and is a non-reliable multicast transmission protocol. The second phase is the recovery transfer phase which is performed using the symmetric-connectionless file transfer protocol by Marchand which is a reliable multicast protocol.

Marchand disclosed (re. Claim 1) multicasting the plurality of packets to multiple client devices including the first client device (Marchand- Paragraph 50-Paragraph 53, Paragraph 57) *using a first transmission protocol that comprises a non-reliable multi-cast transmission protocol* (Marchand-Paragraph 24, Paragraph 60 *existing broadcast/multicast protocol which cannot guarantee that all nodes will contain copy of the replicated file*) and requesting, when the first client has completed download of

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the file, using a reliable protocol with a second client device from the multiple client devices packets not received by the second client device (Marchand- Paragraph 50- Paragraph 53, Paragraph 57, Paragraph 64) wherein the request utilizes a reliable protocol. (Marchand- Paragraph 55, symmetric-connectionless file transfer protocol)

Marchand Paragraph 55 disclosed sending a request using a multicasting protocol which is a reliable protocol for determining which file transfers occurred while the requesting slave process was non-operational.

Furthermore Marchand Paragraph 63 disclosed wherein requests to forward missing (or corrupted) file fragments are sent out to the selected slave process in order to recover the missing fragments.

Thus Marchand disclosed (re. Claim 1) *'continuing to participate in the multicast download after an error and a last packet has not been successfully received'*.

The Examiner notes that in Marchand Paragraph 49 the file size is a known quantity because all information required to perform a file transfer such as file name, file flags, life span, file size, etc are duplicated in each data packet. While the Marchand recovery process does not require any verifications, limitations and constraints regarding file size in order for Marchand to complete the recovery process, Marchand does not explicitly account for file transfers in which *a file size is unknown*.

Riedle Column 4 Lines 50-55 disclosed a file being transferred on a multicast network to a receiving client where the tracking system is dynamically scalable to accommodate extremely large files. The said tracking features could be dynamically

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completed while the transmission was in progress without requiring knowledge of the actual size of the file before transfer begins.

Riedle Column 11 Lines 10-20 disclosed wherein the client re-requests transfer of the specific packets missing as indicated by the holes in the array.

Thus Riedle disclosed (re. Claim 1) '*continuing to participate in the multicast download after an error if a file size is unknown* (Riedle- Column 4 Lines 50-55 without requiring knowledge of the actual size of the file before transfer begins) *and a last packet has not been successfully received*'. (Riedle- Column 11 Lines 10-20 wherein the client re-requests transfer of the specific packets missing as indicated by the holes in the array.)

As previously stated in Marchand Paragraph 49 the file size is a known quantity because all information required to perform a file transfer such as file name, file flags, life span, file size, etc are duplicated in each data packet.

However Bailey-Marchand did not disclose (re. Claim 1) '*requesting the packets not received by the second device if the file size is known and the total size of the lost packets is less than a pre-selected amount*'.

Riedle Column 4 Lines 5-15 disclosed wherein the reconstruction of missing packets is performed only when the *total size of the lost packets is less than a pre-selected maximum threshold*. If the number of lost packets exceeds this maximum, then

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all data is thrown away and the transfer is restarted from the beginning without performing the reconstruction of missing packets.

Riedle disclosed (re. Claim 1) *'requesting the packets not received by the second device if the file size is known and the total size of the lost packets is less than a pre-selected amount'* .(Riedle Column 4 Lines 5-15,the reconstruction of missing packets is performed only when the *total size of the lost packets is less than a pre-selected maximum threshold*)

Bailey,Marchand and Riedle are analogous art because they present concepts and practices regarding data transfer using TFTP. At the time of the invention it would have been obvious to combine Marchand into Bailey. The motivation for said combination would have been to enable a connectionless model where, without any preceding protocol exchange, file fragments can be exchanged among cooperating processes. (Marchand-Paragraph 53)

Furthermore at the time of the invention it would have been similarly obvious to combine Riedle into Bailey-Marchand. The motivation for said combination would have been to enable efficiently tracking lost packets of a file being transferred on a multicast network to a receiving client where the tracking system is dynamically scalable to accommodate extremely large files. (Riedle-Column 4 Lines 45-55)

With respect to splitting the multicast transfer and the recovery transfer phases so that different protocols may be used for each phase, Marchand Figure 3 appears to

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indicate that while the recovery process may be implemented using both multicast and non-multicast methods, Marchand does not explicitly state using non-multicast methods.

Riedle Column 1 Lines 40-55 disclosed unicasting and multicasting protocols for implementing file transfer. Furthermore Riedle Column 2 Lines 45-55, Column 3 Lines 15-25 disclosed wherein only one client may initiate the recovery transfer phase. Riedle Column 4 Lines 10-25 disclosed wherein each individual client device require different packet ranges for recovery.

At the time of the invention it would have been obvious to implement the recovery transfer phases using the unicast (*'non-multicast'*) protocols because as suggested by Riedle the different client devices require different packet ranges for recovery and multicast protocols only make sense when the information being transmitted to each multicast recipient is the same.

Claim 7 (re. computer readable medium) is rejected on the same basis as Claim 1.

Claim 13 (re. a system) is rejected on the same basis as Claim 1.

The motivation to combine described in Claim 1 applies to Claims 7,13.

Bailey-Marchand disclosed (re. Claim 2,8,14) wherein the multicasting of the plurality of packets comprises multicasting to the multiple clients using a multicast Trivial File Transfer Protocol (TFTP). (Bailey-Column 3 Lines 25-45, Column 4 Lines 5-15)

The motivation to combine described in Claim 1 applies to Claims 2,8,14.

Bailey-Marchand-Riedle disclosed (re. Claim 3,9,15) wherein the reliable protocol

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comprises a Trivial File Transfer Protocol (TFTP). (Bailey-Column 3 Lines 25-45, Column 4 Lines 5-15)

The motivation to combine described in Claim 1 applies to Claims 3,9,15.

Bailey-Marchand-Riedle disclosed (re. Claim 4,10,16) wherein the download of the file occurs during a pre-boot phase of the first client device. (Bailey-Fig. 13a-Fig. 13d, Column 11 Lines 45-55)

The motivation to combine described in Claim 1 applies to Claims 4,10,16.

Bailey-Marchand-Riedle disclosed (re. Claim 5,11,17) wherein the file comprises a boot image for the first client device. (Bailey-Fig. 13a-Fig. 13d, Column 11 Lines 45-55)

The motivation to combine described in Claim 1 applies to Claims 5,11,17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,12, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey (US Patent 6185623) further in view of Marchand (US Publication 2008/0168157) further in view of Riedle (US Patent 6983334).

While Bailey-Marchand substantially disclosed the claimed invention Bailey-Marchand did not disclose (re. Claim 6,12,18) wherein the second client device tracks

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packet gaps within the requested file and the size of the packet gaps during the multicast of the file.

Riedle disclosed (re. Claim 6,12,18) wherein the second client device tracks packet gaps within the requested file and the size of the packet gaps during the multicast of the file. (Riedle-Column 5 Lines 5-15, 'array holes', Column 8 Lines 30-45, Column 9 Lines 50-65)

Bailey, Marchand and Riedle are analogous art because they present concepts and practices regarding data transfer using TFTP. At the time of the invention it would have been obvious to combine Riedle into Bailey-Marchand. The motivation for said combination would have been to enable efficiently tracking lost packets of a file being transferred on a multicast network to a receiving client where the tracking system is dynamically scalable to accommodate extremely large files. (Riedle-Column 4 Lines 45-55)

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part

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of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREG BENGZON whose telephone number is

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(571)272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. B./

Examiner, Art Unit 2444

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444